CONTAINER MANAGEMENT REPORT

US ECOLOGY BEATTY

March 2010

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SECTION 9
CONTAINER MANAGEMENT REPORT

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CONTAINER MANAGEMENT PRACTICES

This chapter provides specific process information for container management units and activities at the US Ecology Nevada (USEN) Facility.

9.1.0 Hazardous Waste Container Management Units

References are made throughout this plan to regulations promulgated by the EPA regarding container management requirements for hazardous waste management facilities. These requirements are found at 40 CFR Part 264, Subpart I, which has been adopted by reference in the rules of the Nevada Division of Environmental Protection (NvDEP).

Containers are used on-site to manage hazardous wastes with and without free liquids. A general layout of on-site container management units is shown in Appendix A. These containers vary in size from small vials and pails to large roll-off containers. Containers ranging in size up to 3 yd^3 capacity (including but not limited to 5, 15, 35, 55, 85 & 110 gallon drums, supersacks, and other containers) are considered non-bulk containers, although any size container may be managed as a container under this plan if it can be accommodated in an area permitted for container management.

This plan describes container management practices used on-site for all permit-required RCRA container management units (CMUs), including the units described below.

- **CMU #1**. The unit is an internal (roofed) area with secondary containment, meeting RCRA (and TSCA) container management requirements for solid and / or liquid wastes. Waste with free liquids or with waste codes F020, F021, F023, or F027 may be stored in this area without additional containment. This unit is also called "The PCB Building" and it is located on the northeast side of the facility.
- **CMU #6**. The Dry Hazardous Waste Storage Area #2 (DHWSA #2) is located on the east side of the facility, east of the CMS Building and is utilized as a general containerized waste storage area. The unit is an external area, meeting RCRA container management requirements for waste without free-standing liquids.
- **CMU #7**. The Bin Storage Pad is located on the east side of the facility south of the stabilization processing area, north of the Container Management Building (CMU #16) and is utilized as a general containerized waste storage area. The unit is an external area with secondary containment, for waste with or without free-standing liquids. All waste (including waste codes F020, F021, F023, or F027) may be stored in this area. The area is covered to prevent the contact of rainwater with the containerized waste.
- **CMU #8**. A lab waste storage area operated under 40 CFR §262.34.
- **CMU #16** area is called the Container Management Building (CMB). The CMB is the primary RCRA containerized processing area onsite. Containers are brought to this unit predominantly for subsequent management elsewhere on the facility. Typically, containerized waste is stored,

consolidated into larger containers (e.g.; roll-offs) either within the unit, at the associated dock, or at the other permitted CMUs for subsequent treatment (e.g.; stabilization). If appropriate, some treatment can occur at the CMU. The unit meets RCRA container management requirements for wastes without free-standing liquids. Waste with free-standing liquids must either be moved to an area with secondary containment, the liquid must be treated (e.g.; solidified), it must be decanted, or the container must be placed in containment by the end of the next work day following receipt.

- **CMU #17** The Dry Hazardous Waste Storage Area #3 (DHWSA #3) will be located on the northeast side of the facility, on top of the closed Trench 10 landfill, and will be used as a general containerized waste storage area. The unit is an external area, meeting RCRA container management requirements for waste without free-standing liquids.

Table 1 – Summary of Container Management Units

CMU	Common Name			Secondary Containment Capacity [gal]	Storage Capacity		
	Common Name	Status	Permit Required[3]		Gallons	55-gallon Drums	yds^3
#1	PCB Building	Existing	Yes	26,928	59,400	1080	294
#6	Dry Hazardous Waste Storage Area #2	Existing	Yes	0	250,696	4,588	1,241
#7	Bin Storage Pad	Existing	Yes	20,287[4]	80,778	1,469	400
#8	Lab Waste Storage Area	Existing	No	0	700	13	3.5
#16	Container Management Building	Existing	Yes	61,630	246,520	4,482	1,220
#17	Dry Hazardous Waste Storage Area #3	Existing	Yes	0	694,516	12,627	3,438

The locations of these units are shown on Appendix A. Specific permit modification rules apply to changes to container management units with no more than 25% increase in capacity.

9.2.0 Use and Management of Containers

The following section addresses the issues specifically identified in 40 CFR Part 264, Subpart I [Use and Management of Containers].

9.2.1 Condition of Containers

If a container holding hazardous waste is not in good condition (e.g., severe rusting, severe structural defects, other conditions that could reasonably contribute to the release of the contents) or if it begins to leak, USEN personnel shall immediately transfer the hazardous waste from such container to a container

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3 Separate permits are not required for CMUs operated under the provisions of 40 CFR §262.34, temporary staging areas in support of facility operations, units located within permitted areas or units which are ancillary to or supportive of other facility operations.

4 There are 10 bays @ 271.2 ft^3 each for a total of 2,712 ft^3. There are 7.48 gallons / ft^3, for a total of 20,287 gallons of secondary containment capacity.

that is in good condition or otherwise manage the waste in compliance with the conditions of 40 CFR §264.171 (e.g.; place the entire container in a containment device such as a containment pallet or place a containment device under the container or, for large containers, under the leaking part of the container.

9.2.2 Compatibility of Waste With Containers

USEN will only use containers that are compatible with the waste. If containerized waste is received which is incompatible with the waste, USEN will comply with the conditions of 9.2.1, above.

9.2.3 Container Management Practices

Containers are initially packaged off-site by the generator of the waste and shipped to USEN, but waste may be re-packaged on-site in any of the CMUs. Containers are accepted for management based on the following criteria:

- The hazardous waste must be compatible with the container in which it is stored;
- The waste contents must be authorized in accordance with the facility's permit; and
- Each container must display a label identifying its contents.

Hazardous waste management activities in CMUs may consist of various operations. The operations and their order may vary for containers received and managed at the facility. Hazardous waste management activities in CMUs include:

- Waste acceptance and inspection
- Repackaging
- Storage
- Decanting
- Consolidation
- Container reuse
- Crushing

The following paragraphs describe each of these operations and their limits/controls.

9.2.3.1 Waste Acceptance

Waste acceptance follows five steps:

1. Waste arrives at the facility;
2. Waste is staged at either a CMU or a truck staging area;
3. The waste is reviewed in accordance with waste acceptance procedures (WAP);
4. If the review reveals a discrepancy, the waste is rejected (or put on hold pending resolution) and held in designated staging areas until the discrepancy is resolved; or

5. If the waste is consistent with the profile, the waste is received into a CMU or other RCRA unit for treatment, storage, or disposal.

Initial unloading and staging of containerized waste may occur at any of the CMUs. Many functions may be performed during the unloading and staging process including inspection, opening and closing, unloading, repackaging, labeling, filling, and sampling of containers.

Bulk wastes are staged while undergoing load acceptance processing in accordance with the WAP or for treatment, disposal, or shipment off-site. Bulk or non-bulk wastes may be staged in any of the permitted CMUs in accordance with the capacities listed in Table 1 and their ancillary areas (e.g.; dock areas, loading & unloading areas) or in a landfill in areas with established cover[6].

The procedures for staging wastes are dependent on the unloading schedule and any subsequent process scheduling. Because many different waste types arrive at the facility on any given day, it is not possible to specify the exact type of waste to be staged on a given day in a given staging area. Unless it has been established in accordance with the procedures described in the WAP that non-bulk or bulk containers being unloaded are compatible with the wastes already staged or stored in the unit, containers will be staged either with a minimum separation of 36" from other waste(s), in an area for which the wastes are compatible, in separate containment pallets, or in segregation areas (such as is provided in CMUs #1 and #7).

Containers may be opened for sampling and inspection during staging and, when that process is complete, the containers are closed unless they are to be directly processed (e.g.; consolidated, emptied into a stabilization unit, roll-off container, or disposed on-site).

Bulk containers (e.g., end dumps, dump trucks and pups, roll-offs, etc.) may be initially staged in the receiving area and/or in the inactive portion of the active landfill. The only activities occurring in the staging areas are waste staging and WAP-related / authorized activities (e.g.; inspection, sampling, and the tarping and untarping of shipments.

9.2.3.2 Storage and Labeling

Containers are maintained in a closed condition unless:

- Waste is being added or removed;
- The container contents are being inspected or sampled;
- Reagents are being added; or
- Treatment in the container is occurring.

[6] This is necessary to avoid any determination of improper placement under HSWA.

Drums and boxes may be double-stacked while in storage. No containers are stacked more than two (2) containers high except banded or shrink-wrapped pallets or "nestable" containers[7]. These types of containers are often several units high.

Adequate aisle space is provided within each CMU to permit easy access to all containers for routine inspections and emergency access. Minimum aisle spaces of 36" between rows are maintained. A row typically consists of two (2) containers or pallets placed on either or both sides of the aisle. With this layout, every container in a CMU can be readily inspected to check for leaks or deterioration. If a leaking container is identified, access is available to handle the container as necessary.

All containers should arrive on-site with proper hazardous waste and DOT labels. These labels should provide enough information where as they can be properly checked in and referenced with the appropriate manifest. Containers that will require additional treatment (stabilization, neutralization, chemical oxidation and/or deactivation) and be stored at the facility will be identified with a US Ecology label. These US Ecology labels will be fixed to the container within 24 hours (M-F) of receipt. Containers that will be processed immediately such as direct landfill and solidification will not be issued an US Ecology label unless they will not be processed within 24 hours. At all times the contents of the containers will be identified by either a generator applied label or US Ecology applied label. Container storage is not to exceed 1 year from the date of receipt. USEN will perform a physical inventory at a minimum frequency of once per month. Reports generated by AESOP (or NEWTON once released) will be utilized to ensure all containers are disposed of within 1 year of receipt.

9.2.3.3 Decanting

This section addresses the decanting of liquids from containers while the container is within a CMU. It does not address the removal of drum contents at the stabilization area, or the consolidation of drums into larger containers.

All drums or containers known to have free-standing liquids will be unloaded at CMUs with secondary containment. If secondary containment does not exist, then temporary secondary containment devices (e.g.; containment pallets or pans) may be used, or the container will be moved to a CMU with secondary containment by the end of the next workday. Alternatively, the free-standing liquids can be removed or eliminated.

When possible, only containers from a single waste stream or waste type will be decanted together. Occasionally, small amounts from several waste streams will require decanting and subsequent mixing of the waste streams will occur.

[7] For example, a 35-gallon drum can be safely "nested" on the top of a 55-gallon drum.

Decanting is achieved by removing the liquids by vacuum or through the use of a drum tilter/decanter. Typically, a vacuum truck or unit are used to withdraw the liquids from the containers. The unit is staged adjacent to the container(s) and a vacuum hose connected to the unit accesses the containers.

9.2.3.4 Consolidation

Containerized waste is aggregated and the contents placed into a large (bulk) containers for subsequent treatment or disposal allowing for the efficient utilization of the stabilization process for similar wastes. Full larger containers (e.g.; roll-offs) may remain in the off-loading area through the end of the next operating day and then be placed into a container storage area (if the waste is hazardous) or treated. Typically, containerized waste is aggregated into larger roll-offs for the purpose of common treatment. Once aggregated, the contents of the roll-off may be homogenized and frequently a sample is taken of the aggregated material for characterization and/or recipe development.

9.2.3.5 Container Reuse

Containers may be reused or recycled if they are RCRA empty. Containers targeted for reuse will be staged in any area of the facility. In addition, USEN may use recycling units which are not permit-required units for recycling metal containers (including aerosol can recycling).

9.2.3.6 Container Crushing

Containers to be disposed in a landfill must be 90% full or crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill (40 CFR §264.315). Containers can be crushed utilizing a drum crusher, heavy equipment (e.g.; excavators, bulldozers, compactors, or loaders), or in a stabilization tank. Alternatively, containers may be disassembled in any waste management unit prior to burial. Large containers (e.g.; tanks) can be placed in the landfill and either crushed & / or filled prior to final burial.

9.2.4 Containment

Waste with the F020, F021, F022, F023, F026 and F027 listing may only be stored in CMUs with appropriate secondary containment or in containment pallets or similar devices. The CMUs with secondary containment are: CMU #1 and CMU #7 and CMU #16 although any CMU can be modified in the future, through the use of a Class 1 permit modification, to add secondary containment.

9.2.4.1 Secondary Containment System Design and Operation

CMU #1 is an existing, enclosed, un-subdivided receiving, storage, and treatment area for containers with or without free liquids. It is curbed and constructed of reinforced concrete for containment.

CMU #7 is an existing, unenclosed, subdivided storage, processing, and receiving area for containers with or without free liquids. It is curbed and constructed of reinforced concrete for containment. The storage area also is covered to prevent rainwater from entering.

CMU #16 is an un-subdivided receiving, storage, and treatment area for containers with or without liquids. The container storage area is curbed and constructed of reinforced concrete for containment. The storage area also is covered to prevent rainwater from entering.

9.2.4.2 Requirement for the Base or Liner to Contain Liquids

All of the CMUs which contain containers with free-liquids are maintained free of cracks or gaps (to the extent practicable) that could allow the infiltration of liquid through the containment barrier. As an alternative, containment pallets or pans may be used in any container management area or unit for the storage of containers with free-liquids. Significant cracks[8] found in the flooring or curbing of the CMUs are fixed, as necessary, to maintain compliance with 40 CFR §264.175(b).

9.2.4.3 Containment System Capacity

Calculations of the containment system capacity are provided in the Appendix H to this report. Table 1 summarizes the total permitted volume of free liquids within the CMU. Additionally, Table 1 demonstrates:

1) for unenclosed CMUs, the containment system for each CMU managing liquids has sufficient capacity to contain the greater of 25% of the volume of all the containers that can be stored in an area plus the precipitation from a 25-year, 24-hour storm event, or the volume of the largest container, plus the precipitation from a 25-year, 24-hour storm event, whichever is greater and

2) for enclosed CMUs, each CMU managing liquids has sufficient capacity to contain the greater of 25% of the volume of all the containers that can be stored in an area, or the volume of the largest container, whichever is greater.

Since the facility also maintains a Toxic Substance Control Act (TSCA) permit, USEN will follow the more stringent secondary containment regulations found in 40 CFR §761.65. These regulations require secondary containment capacity to be 25% of the storage capacity where as the RCRA regulations in 40 CFR §264.175 require only 10%.

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8 Hairline cracks or intermittent coating "flaking" are not considered significant for the USEN facility due to its remote arid location.

CMUs #1, #7 and #16 are currently designed for the storage of liquids and other CMUs can be utilized for the storage of liquids with the utilization of containment devices (such as containment pallets) or after construction of secondary containment pads. In no case will the maximum drum inventory of containers with free liquids inventory be exceeded in a given CMU, however, if the containers do not contain free liquids, the limits summarized in Table 1 may be exceeded if all other operating procedures are maintained.

9.2.4.4 Removal of Liquids or Residues from Containment System

Spilled or leaked wastes and accumulated precipitation are removed from the containment systems in a timely manner to prevent overflow of the containment system. Typical equipment used to remove these liquids includes shovels, vacuum trucks, portable submersible pumps, hoses, fixed piping, etc. If any recoverable liquids are discovered in the containment systems removal of the material is scheduled and implemented within 2 working days, unless the liquid is frozen. Within 2 working days after the liquid is no longer frozen, the liquids are removed. Rain water is removed as soon as practicable. Residues from the containment systems are handled as described in WAP.

9.2.5 Special Requirements for Ignitable or Reactive Wastes

Ignitable or reactive wastes will not be stored within 15 meters (50') of the facility's property line.

9.2.6 Special Requirements for Incompatible Wastes

In accordance with the requirements of 40 CFR §264.177, USEN has developed a program to prevent the accidental commingling or reaction of incompatible wastes, including:

- Proper identification of the hazardous characteristics of incoming waste streams during the waste stream approval process.
- Proper segregation of incompatible materials.
    - Incompatible wastes or materials will not be stored or placed in the same container.
    - Wastes will be segregated according to the designated compatibility group, and placed so as to prevent waste-to-waste contact that could lead to a reaction.
- Proper identification of the potential for incompatible reactions through the waste stream verification program including testing of incoming shipments in accordance with the WAP.
- Compatibility between the waste and storage container will be ensured by placing waste into clean containers; or though use of technical knowledge of the waste and containers.

9.2.7 Closure

At closure of any unit, all hazardous waste and hazardous waste residues from the containment system will be removed and managed in accordance with the procedures listed in the WAP. Area-wide closure activities will be managed in accordance with the procedures listed in the Closure Plan.

9.2.8 Air Emission Standards

Subpart CC standards applicable to containers of hazardous wastes are found in 40 CFR §§264.1086 and 265.1087. There are three (3) levels of air emission controls for containers based on container size, contents and whether the container is used in a waste stabilization process. Table 3 provides a matrix for determining the applicable control level for a container. The term "in light Material Service" means a container that is used to manage a material for which both of the following conditions apply:

1) the vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20° C; and

2) the total concentration of the pure organic constituents have a vapor pressure greater than 20% by weight. Note that 0.3 kPa equals approximately 0.043 psi.

Table 2 - Determination of Applicable Level of Control for Containers Subject to Subpart CC Regulations

Container Design Capacity	Containers in Light Material Service	Does Waste Stabilization Occur in the Container?	Level of Control
<0.1 m^3 (~ 26 gals)	Yes	Yes	Exempt
	No	No	
	No	Yes	
	Yes	No	
0.1 m^3 & < 0.46 m^3 (~ 119 gals)	Yes	Yes	Container Level 2
	No	No	Container Level 1
	No	Yes	Container Level 2
	Yes	No	Container Level 1
0.46 m^3	Yes	Yes	Container Level 2
	No	No	Container Level 1
	No	Yes	Container Level 2
	Yes	No	Container Level 1

Container Level 1 controls require that the hazardous waste is stored in an approved DOT container, a container equipped with a cover and closure devices for each opening, or an open top container with an organic vapor-suppressing barrier (e.g.; tarp).

Container Level 2 controls require that the hazardous waste is stored in an approved DOT container, a container that operates with no noticeable organic emissions, or a demonstrated vapor-tight container.

Container Level 3 controls require that the hazardous waste is stored in a container that is either vented directly to an air emission control device or located inside an enclosure that is vented through a closed vent system to a control device.

Table 3 - Determination of Acceptable Container Types Under Subpart CC

Container Level	Acceptable Container Types
1	An approved DOT container
	A container equipped with a cover and closure device for each opening
	An open top container with an organic vapor suppressing barrier (e.g.; tarp)
2	An approved DOT container
	A container that operates with no noticeable organic emissions
	A container with a demonstrated vapor-tight lid

Table 3 - Determination of Acceptable Container Types Under Subpart CC	
Container Level	**Acceptable Container Types**
3	A container that is either vented directly to an air emission control device
	A container located inside an enclosure that is vented through a closed vent system to a control device

If hazardous waste is in a container when a facility first accepts it, the facility performs a visual inspection of the container within 24 hours after its arrival and at least once a year thereafter. All containers are customarily inspected during the load acceptance process. Repairs of defects are completed within five (5) days of detection or the contents of the container are transferred to a container that complies with Subpart CC standards. If a non-DOT container larger than 0.40 m^3 (~ 119 gallons) is used with Container Level 1 controls, records of the procedure used to determine that the container is not managing hazardous waste in "Light Materials Service" must be maintained. The Subpart CC standards contain special record keeping and inspection requirements for Level 3 containers and their associated closed-vent systems, enclosures and control devices. All containers subject to the Subpart CC regulations will be identified on the USEN bar code label with "*Subpart CC*" and be segregated from all other waste streams.

Containers subject to Subpart CC regulation must be kept closed except:

- While adding or removing waste or within 15 minutes after which no additional material has been added or removed from the container,
- When sampling the waste or accessing other equipment inside the container,
- When a pressure relief device is used for maintaining internal pressure within the container and the device operates as designed in accordance with the container design specifications,
- When opening a safety device, as defined in 40 CFR §265.1081 to avoid an unsafe condition, or
- When the container meets the definition of empty as defined in 40 CFR §261.7(b).

Table 4 – Control Levels

CMU Unit	Common Name	Control Levels
#1	PCB Building	Level 1 or Level 2
#6	Dry Hazardous Waste Storage Area #2	Level 1 or Level 2
#7	Bin Storage Pad	Level 1 or Level 2
#8	Lab Waste Storage Area	Level 1 or Level 2
#16	Container Management Building	Level 1 or Level 2
#17	Dry Hazardous Waste Storage Area #3	Level 1 or Level 2

9.3.0 Special Requirements for Laboratory Drain Totes

All laboratory sink wastewater will drain directly into underground storage totes. The water collected has been determined to be characteristic for metals and carry the D004-D011 codes. In addition the waste

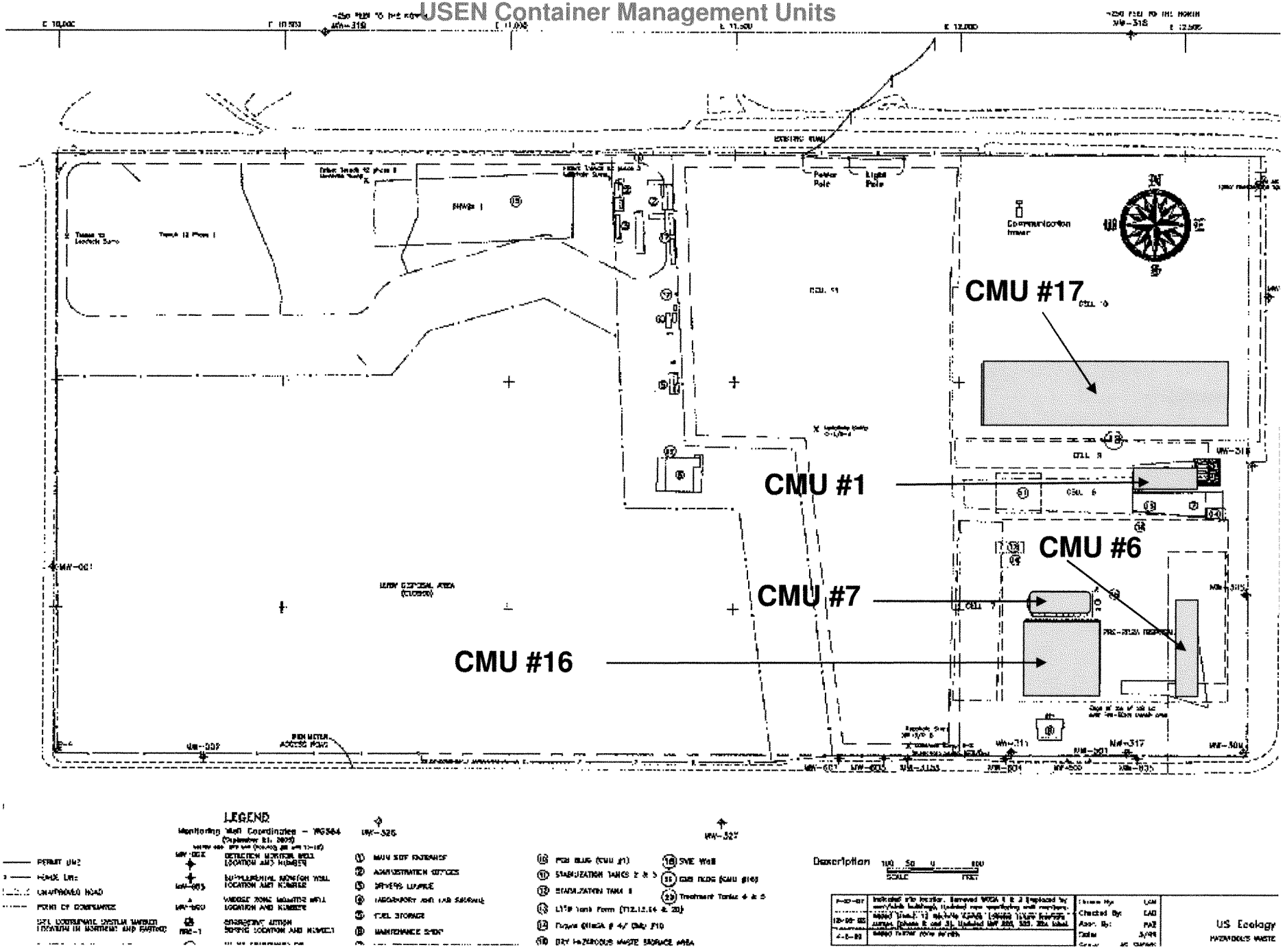
water will carry all RCRA listed codes (F, K, U, and P). USEN considers this a 90 day accumulation area per 40 CFR §262.34. Once the totes are full or 90 days has been reached the totes will be emptied either by removing the totes from the containment area or using the on-site vacuum truck. The preferred method is using the vacuum truck. The full totes or vacuum truck will then be emptied into T-11.

The totes will be stored in an underground containment area that is built of concrete blocks. The blocks will be coated with a chemical resistant epoxy. Photos of the totes and containment area are included in Appendix I.

APPENDIX A

CMU GENERAL LOCATION MAP

USEN Container Management Units

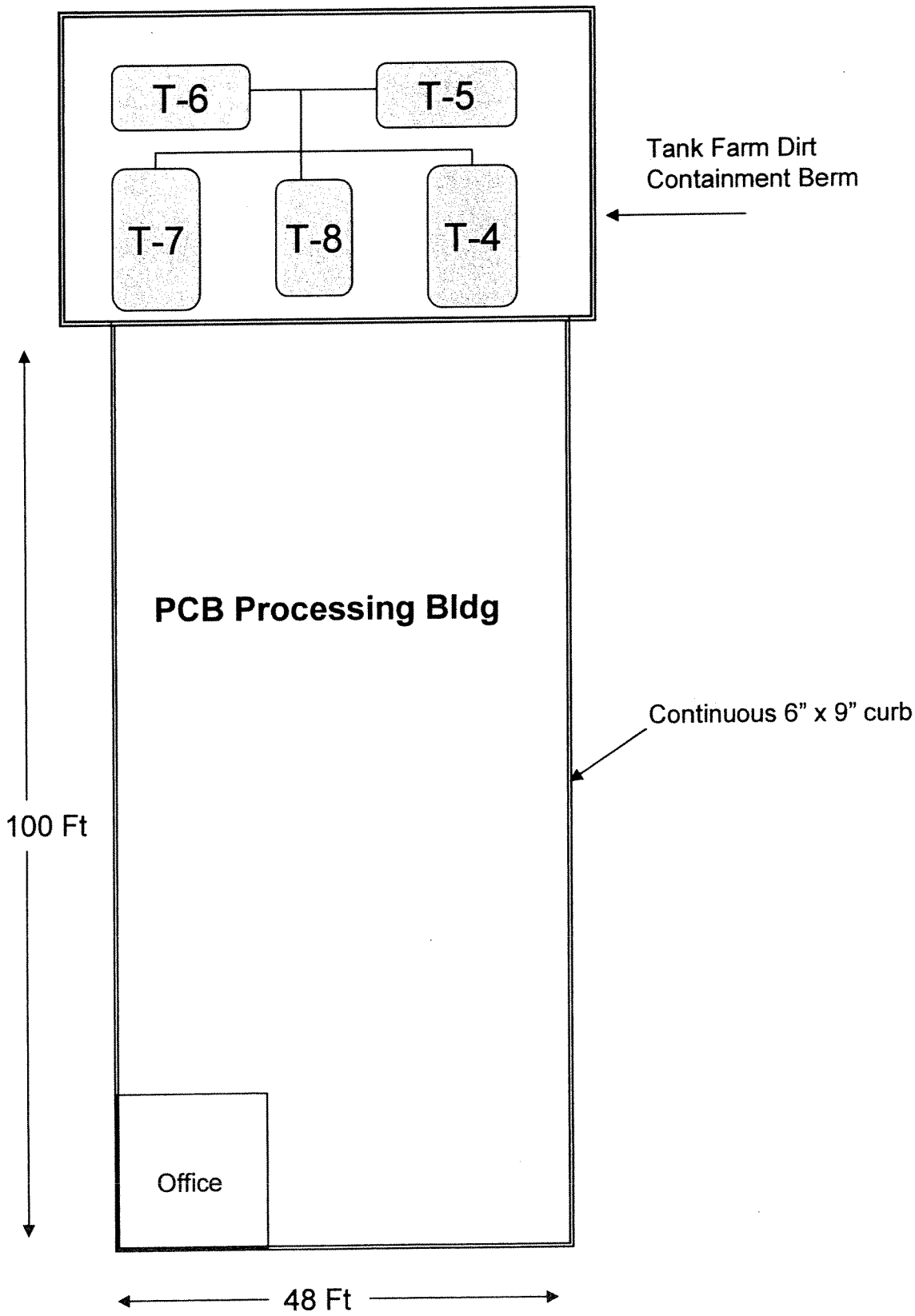


APPENDIX B

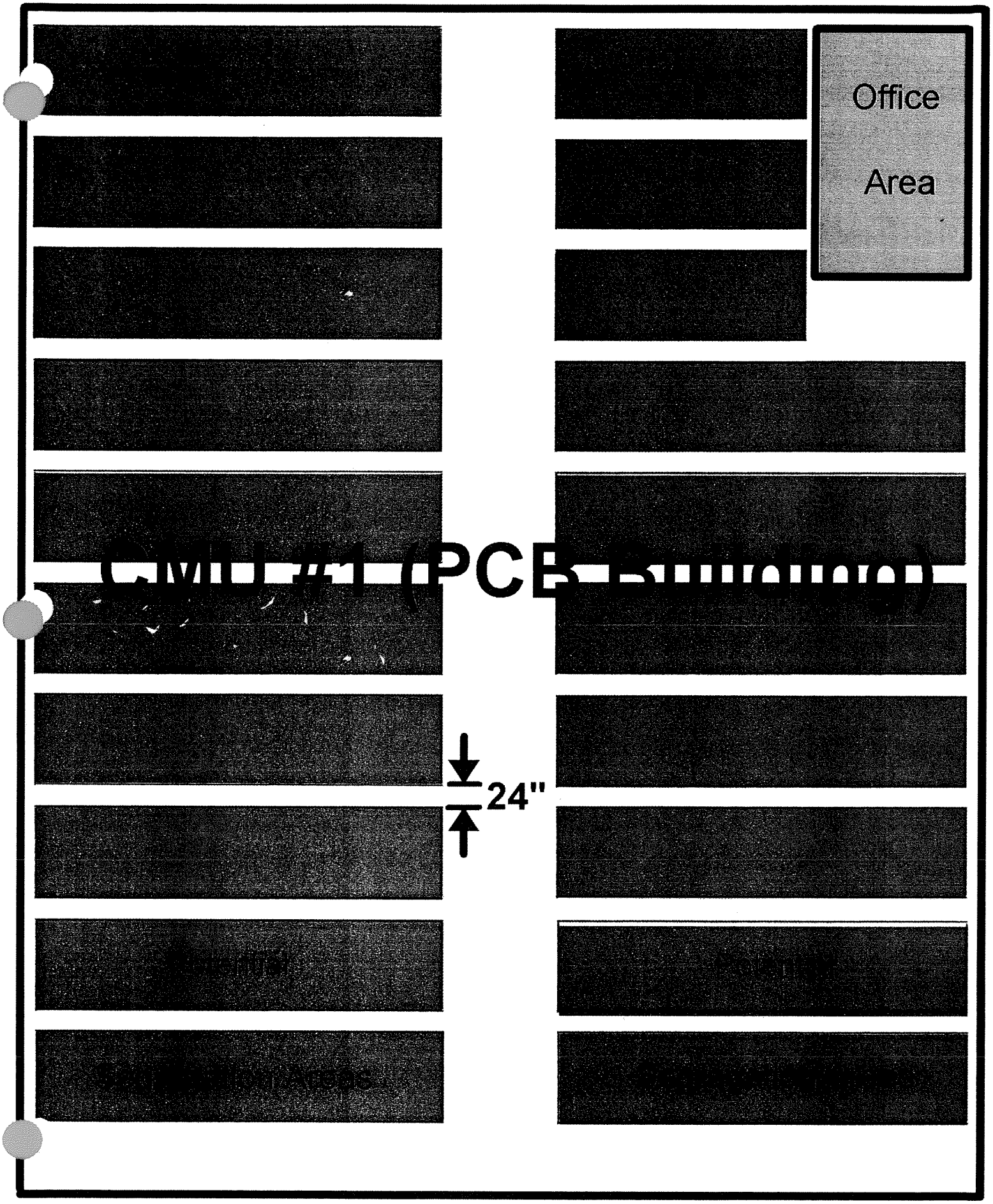
CMU #1

PCB BUILDING

PCB Processing Building and Tank Farm



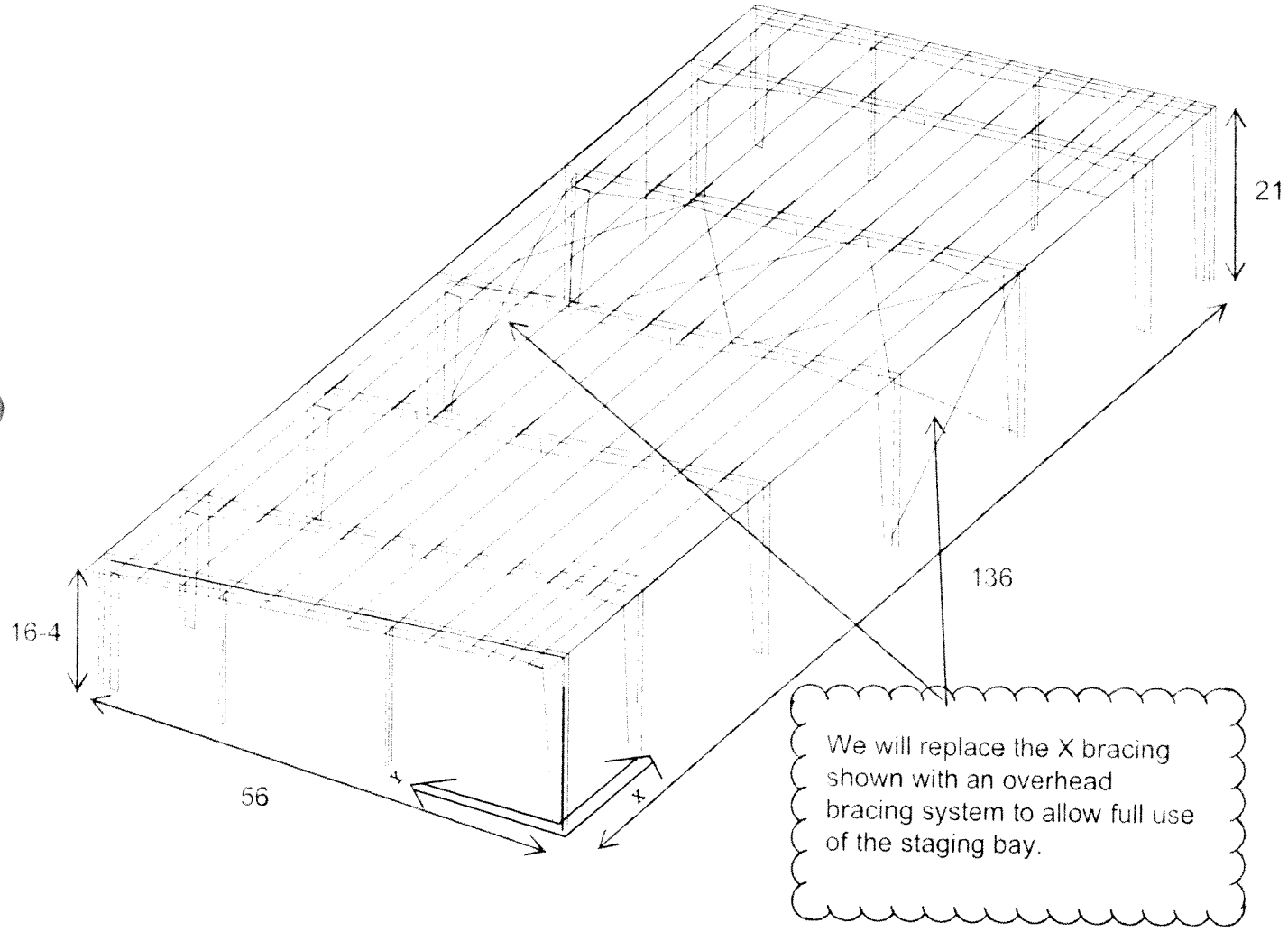
US Ecology Nevada

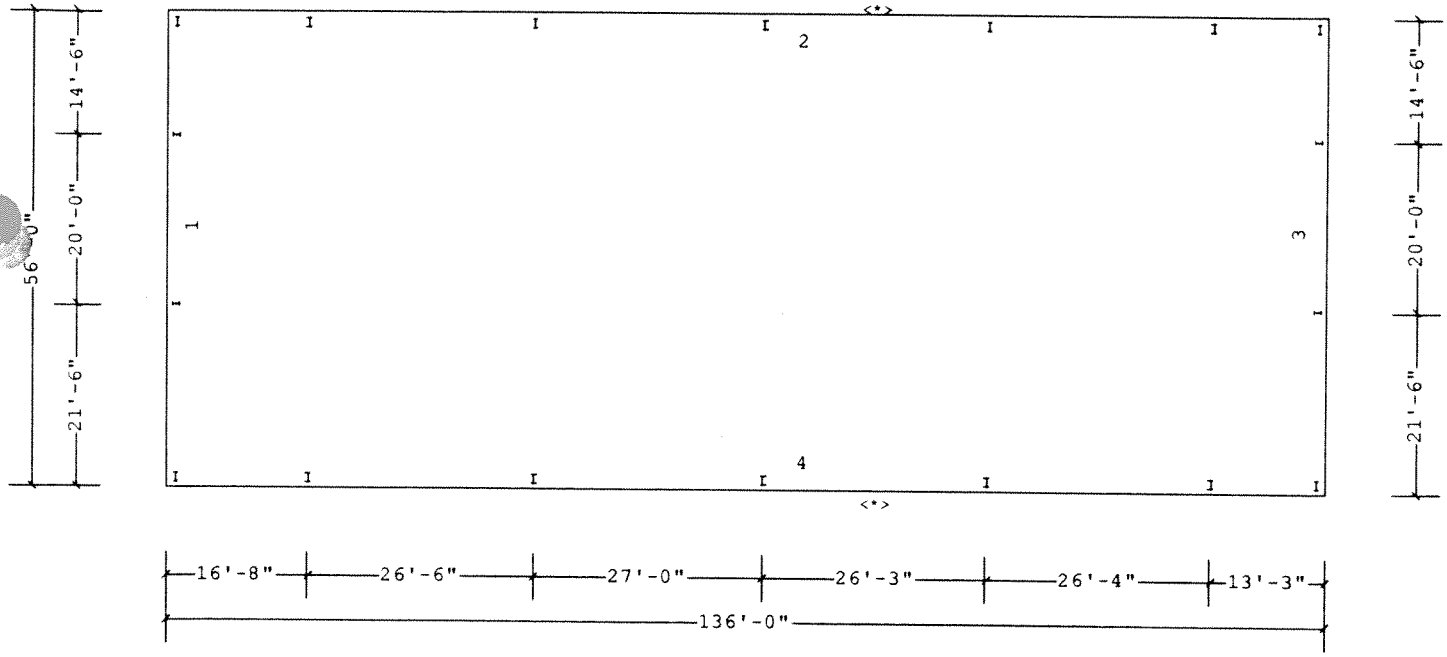

Office
Area
24"

APPENDIX C

CMU #7

Bin Storage pad


21
16-4
136
56
We will replace the X bracing shown with an overhead bracing system to allow full use of the staging bay.


56'-0"
14'-6"
20'-0"
21'-6"
1
2
3
4
<*>
<*>
14'-6"
20'-0"
21'-6"
16'-8"
26'-6"
27'-0"
26'-3"
26'-4"
13'-3"
136'-0"

Rev	Drawn	Check	Appr	FE Appr	Date	Description
0	PAB	KEC		HWA	11/89	ISSUED FOR CONSTRUCTION
1	MJM				11/90	CORRECTED LANDING GEAR LOCATION IN SECTION B

US Ecology

on American Ecology company
US Ecology Inc.
8200 Shaughnessy Road
Suite 300
Louisville, Ky 40222

Reference Drawings

Drawn By MJM
Checked By
Appr. By
PE Appr. By HWA
Date 9/13/88
Scale NOTED
Project No. 050039

HAZARDOUS WASTE MANAGEMENT FACILITY
US Ecology, Inc.
BEATTY, NEVADA

TRUCK PARKING

Drawing No. NX-104-CON-006

Revision No.

NOTE: ELEVATIONS ARE BASED ON A DATUM ELEVATION OF 100.00.

March 13, 1990

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEVADA
HOWARD W. HARMON
CIVIL

DETAIL E
SCALE 3/4" = 1'-0"

6"
5'-0"
3'-0"
6"
1"
3"
CURB HEIGHT VARIES (3" TO 1'-3")

DETAIL C
SCALE 3/4" = 1'-0"

6"
12'-8"
6"
CURB HEIGHT VARIES (3" TO 1'-3")

DETAIL D
SCALE 3/4" = 1'-0"

#4 L BARS @ 3'-0" O.C.
SMOOTH DOWELS GREASED ON ONE END THRU JOINT @ 3'-0" O.C.
4" DUMBBELL WATERSTOP (3/16" WEB PVC or RUBBER)
#5 BAR
SMALL TOOLED RADIUS
0'-6"
0'-6"
INITIAL POUR

SECTION B
SCALE 3/8" = 1'-0"

SEE DETAIL E
6"
6"
3'-0"
6'-0"
14'-0"
#4 BENT BARS @ 9" O.C.
#5 BARS @ 9" O.C.
1'-0"
24'-6"

SECTION A
SCALE 3/16" =1'-0"

ELEV. 100.50
ELEV. 99.25
SEE DETAIL C
ELEV. 100.50
ELEV. 99.25
ELEV. 99.92
SEE DETAIL D
ELEV. 101.17
ELEV. 99.92
ELEV. 100.25
ELEV. 100.17

PLAN
SCALE 3/16" = 1'-0"

B
ELEV. 100.17
ELEV. 100.25
ELEV. 100.92
ELEV. 100.84
#5 BARS @ 9" O.C. BOTH WAYS IN SLAB
ELEV. 100.25
ELEV. 100.17
14'-0"
24'-6"
56'-0"
CURB ELEV. 100.50
4% SLOPE
4% SLOPE
4% SLOPE
4% SLOPE
12% SLOPE
12% SLOPE
STOP GATE
SEE DETAIL F
CURB ELEV. 101.17
ELEV. 99.92
ELEV. 99.25
6'-0"
1'-0"
CURB ELEV. 100.50
0'-6"
0'-6"
12'-8"
0'-6"
0'-6"
0'-6"
66'-4"
66'-4"
132'-8"
B

DETAIL F
SCALE 1 1/2" = 1'-0"

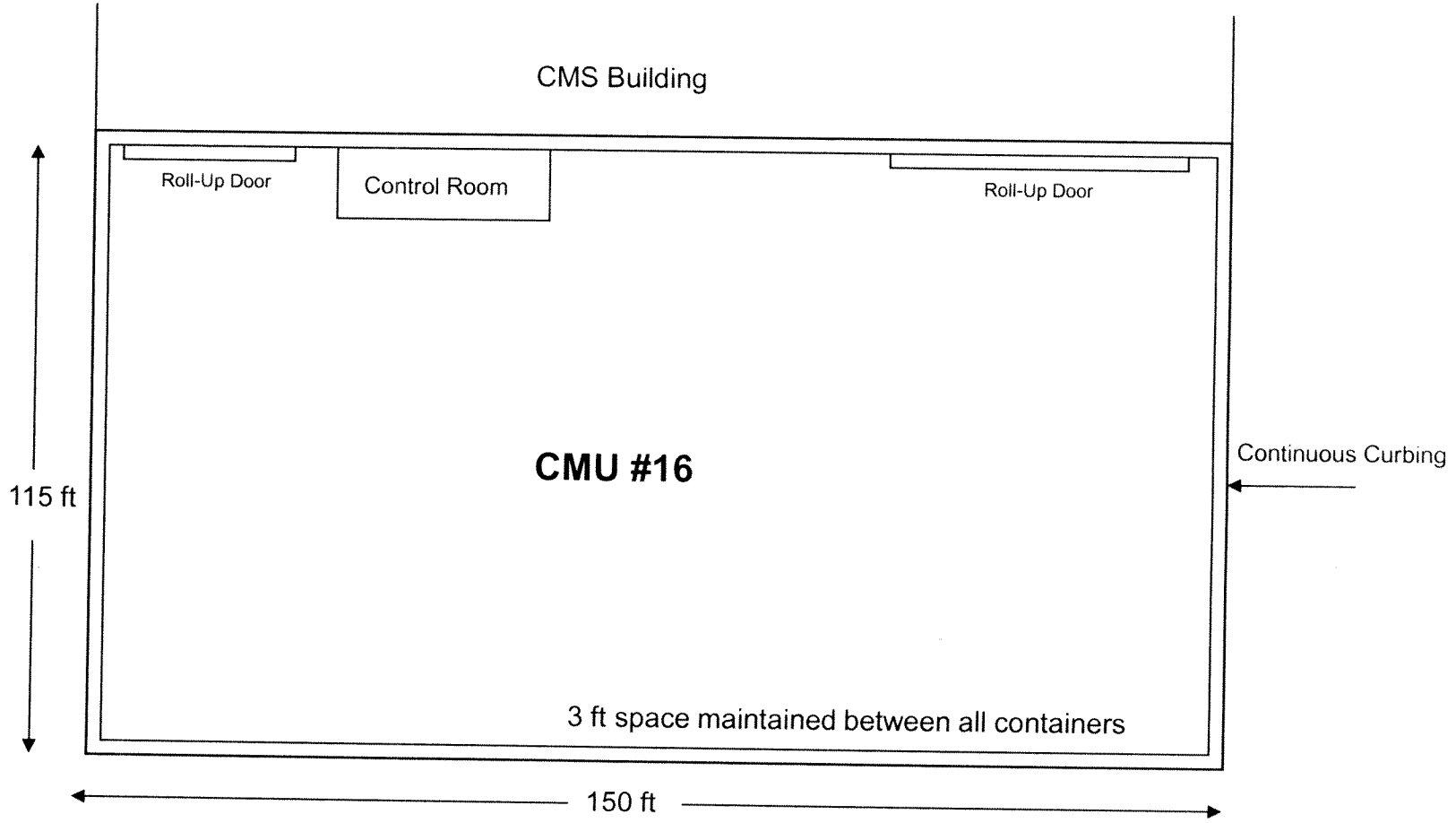
0'-6"
1'-0"
1'-0"
1'-3"

APPENDIX D

CMU #16

Container Management Building

Container Management Pad



US Ecology Nevada

October 2011

Letter of Certification

Contact:
Name: RSCI
Address: 1854 E Lanark

City, State: Meridian, Idaho 83642
Country: United States

Project: US Ecology Container Management
Builder PO #:
Jobsite:

City, State: Beatty, Nevada 89003
County, Country: Nye, United States

This is to certify that the above referenced VP BUILDINGS project has been designed for the applicable portions of the following Building Code and in accordance with the order documents which have stipulated the following applied environmental loads and conditions:

Overall Building Description

Shape	Overall Width	Overall Length	Floor Area (sq. ft.)	Wall Area (sq. ft.)	Roof Area (sq. ft.)	Max Eave Height	Min Eave Height 2	Max Roof Pitch	Min. Roof Pitch	Peak Height
Container Management	150/0/0	111/0/0	16650	11899	17308	21/0/0	21/0/0	1.000:12	1.000:12	27/3/0

Loads and Codes - Shape: Container Management

City: Beatty **County:** Nye **State:** Nevada **Country:** United States
Building Code: 2003 International Building Code
Building Use: Standard Occupancy Structure
Built Up: 89AISC
Cold Form: 04AISI
Rainfall: 4 00 inches per hour

Dead and Collateral Loads
Collateral Gravity:7 00 psf
Collateral Uplift: 0 00 psf

Roof Covering + Second Dead Load: Varies
Frame Weight (assumed for seismic):4 00 psf

Live Load
Live Load: 20 00 psf Reducible

Wind Load
Wind Speed: 90 00 mph
Wind Exposure (Factor): B (0 701)
Parts Wind Exposure Factor: 0 701

Wind Enclosure: Partially Enclosed
Wind Importance Factor: 1 000

Topographic Factor: 1 0000

NOT Windborne Debris Region
Base Elevation: 0/0/0
Primary Zone Strip Width: 16/9/10
Parts / Portions Zone Strip Width: 8/4/13
Basic Wind Pressure: 12 35 psf

Snow Load
Ground Snow Load: 5 00 psf
Design Snow (Sloped): 3 85 psf
Snow Exposure Category (Factor): 2 Partially Exposed (1 00)
Snow Importance: 1 000
Thermal Category (Factor): Kept just above freezing (1 10)
Ground / Roof Conversion: 0 70
% Snow Used in Seismic: 0 00
Seismic Snow Load: 0.00 psf
Unobstructed, Slippery Roof

Seismic Load
Mapped Spectral Response - Ss:87 00 %g
Mapped Spectral Response - S1:30 00 %g
Seismic Hazard / Use Group: Group 1

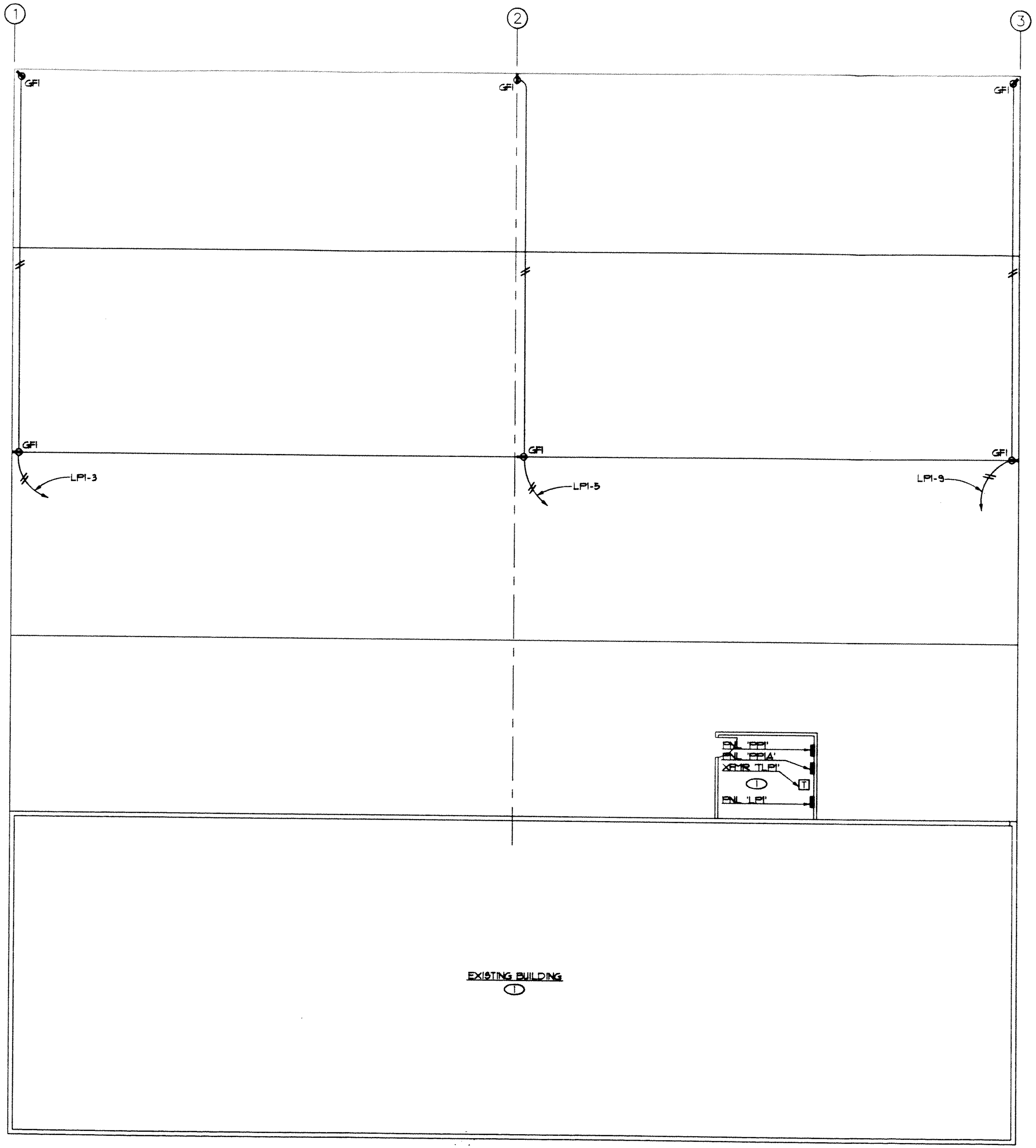
Seismic Importance: 1 000
Seismic Performance / Design Category: D

Framing Seismic Period: 0 3198
Bracing Seismic Period: 0 1962
Framing R-Factor: 3 5000
Bracing R-Factor: 3 5000
Soil Profile Type: Stiff soil (D, 4)
Frame Redundancy Factor:1 3744
Brace Redundancy Factor:1 5000
Frame Seismic Factor (Cs): 0 1909 x W
Brace Seismic Factor (Cs): 0 1909 x W

Per Article 2 9 in the Builder Agreement, VP Buildings assumes that the Builder has called the local Building Official or Project Engineer to obtain all code and loading information for this specific building site

The steel design is in accordance with VP BUILDINGS standard design practices, which have been established based upon pertinent procedures and recommendations of the following organizations :

American Institute of Steel Construction (AISC)
American Iron and Steel Institute (AISI)
American Welding Society (AWS)
American Society for Testing and Materials (ASTM)
Canadian Standards Association
CSA W59-Welded Steel Construction
Limit State Design of Steel Structures
Metal Building Manufacturers Association (MBMA)
VP Buildings is certified by:
- AISC-MB Certified (Design and Manufacturing)
- CSA A660 Certified (Design and Manufacturing)
- IAS Approved Fabricator
- Canadian Welding Bureau Div 1 Certified



POWER PLAN (A / E-3)
1/8" = 1'-0"

PANEL 'PP1' 277 /480 VOLT 3 PHASE 4 WIRE 400 AMPERE MAIN L.O. : 400 AMPERE BUS
LOCATION CONTROL ROOM MOUNTING SURFACE A.I.C. 22,000

CKT NUMBER	LOAD LINE A	LOAD LINE B	LOAD LINE C	LOAD DESCRIPTION	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	BUS A B C	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	LOAD DESCRIPTION	LOAD LINE A	LOAD LINE B	LOAD LINE C	CKT NUMBER
1	2070			EPN 1 & 2	2	15		15	3	ADD. ROTARY FDR.	1270			2
3		2070		-								1270		4
5			2880	LIGHTS	1	20							1270	6
7	1540			VIBRATORY CPNVEY.	3	15		15	3	ADD. ROTARY FDR.	1270			8
9		1540										1270		10
11			1540										1270	12
13	5485			XFMR 'TLP1'	3	100		100	3	PNL 'PP1A'	6120			14
15		1540										3600		16
17			1830										3600	18
19	-			BUSSED SPACE	1	-		-	1	BUSSED SPACE	-			20
21		-										-		22
23			-										-	24
25	-										-			26
27		-										-		28
29			-										-	30
31														32
33														34
35														36
37														38
39														40
41														42
							SUB TOTALS							

NOTES:

	LINE A	LINE B	LINE C
LINE TOTALS	18155	12090	12410
LCL ADDER	485	485	1205
TOTAL	18640	12575	13615
LINE AMPS	61		
TOTAL KVA LOAD	44.1		

PANEL PP1A 277 /480 VOLT 3 PHASE 4 WIRE 200 AMPERE MAIN - : 200 AMPERE BUS
LOCATION - MOUNTING SURF A.I.C. -

CKT NUMBER	LOAD LINE A	LOAD LINE B	LOAD LINE C	LOAD DESCRIPTION	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	BUS A B C	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	LOAD DESCRIPTION	LOAD LINE A	LOAD LINE B	LOAD LINE C	CKT NUMBER
1	2880			CANOPY LIGHTS	2	20		20	1	HEAT TRACE	1800			2
3		2880		CANOPY LIGHTS						SPARE		-		4
5			3220	FLOOD LIGHTS	1	20							-	6
7	-			SPARE							-			8
9		-										-		10
11			-										-	12
13														14
15														16
17														18
19														20
21														22
23														24
25														26
27														28
29														30
31														32
33														34
35														36
37														38
39														40
41														42
							SUB TOTALS							

NOTES:

	LINE A	LINE B	LINE C
LINE TOTALS	5400	2880	3220
LCL ADDER	720	720	805
TOTAL	6120	3600	4025
LINE AMPS	22		
TOTAL KVA LOAD	13.1		

PANEL 'LP1' 120 /208 VOLT 3 PHASE 4 WIRE 200 AMPERE MAIN C.B. : 225 AMPERE BUS
LOCATION CONTROL ROOM MOUNTING SURFACE A.I.C. -

CKT NUMBER	LOAD LINE A	LOAD LINE B	LOAD LINE C	LOAD DESCRIPTION	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	BUS A B C	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	LOAD DESCRIPTION	LOAD LINE A	LOAD LINE B	LOAD LINE C	CKT NUMBER
1	1130			EXIST GARAGE DOOR OPER.	1	20		20	1	EXIST GAR. DOOR OPER.	1130			2
3		720		NEW RECEPTS						SPARE		-		4
5			540	NEW RECEPTS						SPARE			-	6
7	540			EXIST RECEPTS						EXIST RECEPTS	500			8
9		360		NEW RECEPTS						EXIST BAGHOUSE CONTR.		500		10
11			500	EXIST BAGHOUSE CONTR.						EXIST EXTER. LIGHTS			630	12
13	840			EXIST EXTER. LIGHTS						EXIST RECEPTS	360			14
15		360		NEW RECEPTS						SPARE		-		16
17			-	SPARE									-	18
19	300			EXIST CONTR. RM LIGHTS							-			20
21		-		SPARE								-		22
23			-										-	24
25	-										-			26
27		-										-		28
29			-										-	30
31														32
33														34
35														36
37														38
39														40
41														42
							SUB TOTALS							

NOTES:

	LINE A	LINE B	LINE C
LINE TOTALS	5200	1540	1670
LCL ADDER	285	-	-
TOTAL	5485	1540	1670
LINE AMPS	46		
TOTAL KVA LOAD	9.2		

NOTES (THIS SHEET ONLY)

(1) EXISTING AREA TO REMAIN EXCEPT AS NOTED.

OWNER APPROVED

DATE:

REVISION

PREPARED FOR THE EXCULSIVE USE OF:

MAXIM ELECTRICAL CONTRACTORS

JON KING
OFF: 702-633-8800
CELL: 702-376-4036
FAX: 702-399-5737
1306 W. CRAIG RD. ST. 'E'
BOX 181 N. L.V., NV 89032
maximelectric@yahoo.com
maximelectric@cox.net

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP AND FAULT CURRENT CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(a) FPN NO. 4

H2A INC.
ELECTRICAL ENGINEERING
OFF: (702) 451-0146
FAX: (702) 451-2650
5229 JAROM STREET
LV NV 89120

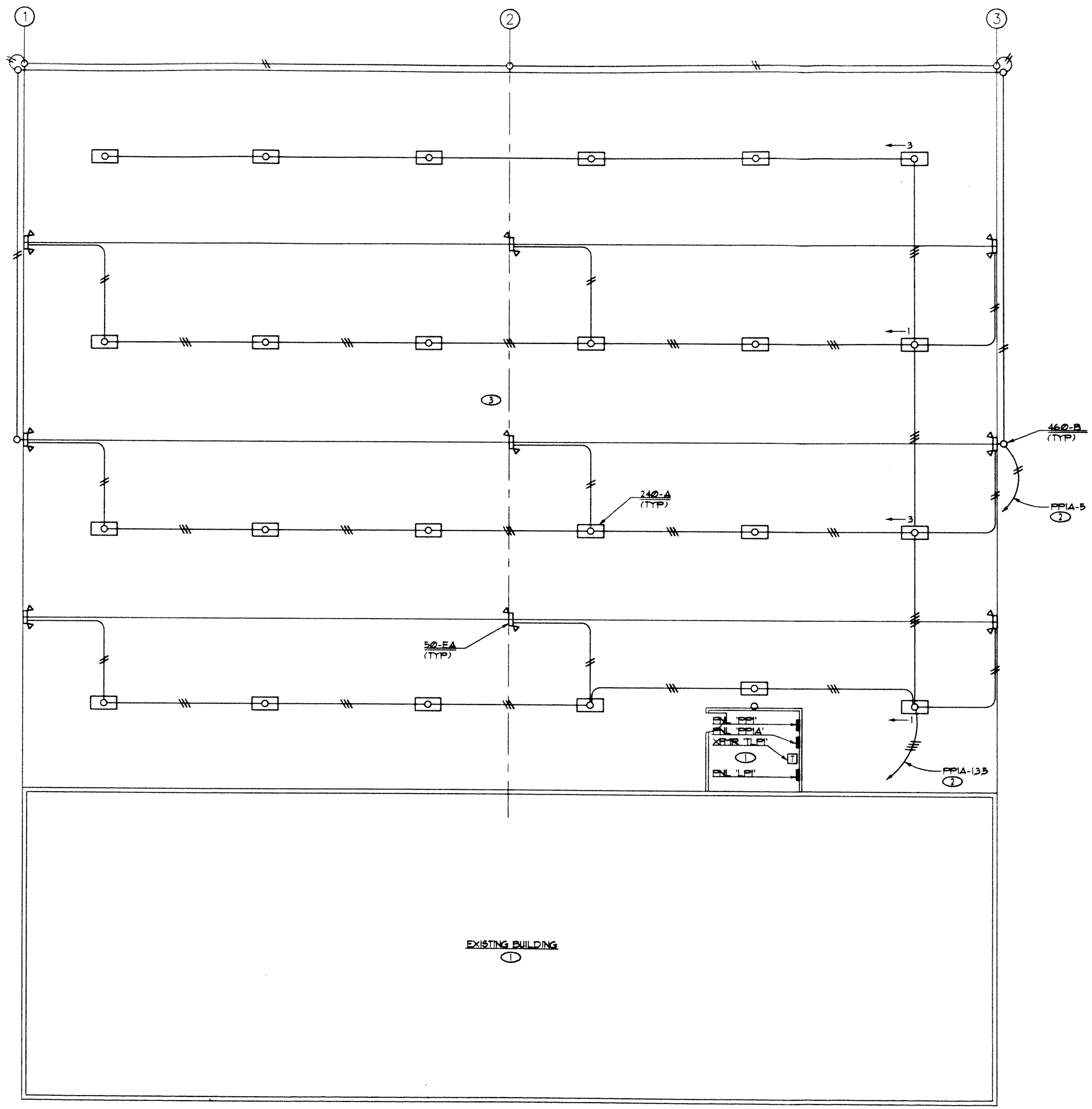
US ECOLOGY
CANOPY ADDITION
BEATTY, NEVADA

POWER PLAN

DATE :
SCALE
DRAWN
JOB
SHEET

E-3

OF SHEETS



LIGHTING PLAN (A / E-2)

1/8" = 1'- 0"

NOTES (THIS SHEET ONLY)

1. EXISTING AREA TO REMAIN EXCEPT AS NOTED.
2. ALL LIGHTING WILL BE CONTROLLED IN CONTROL ROOM BY TIME SWITCH SYSTEM.
3. ENTIRE CANOPY AREA IS ELECTRICALLY NON-HAZARDOUS PER THE OWNER.

OWNER APPROVED

DATE: ________

REVISION

PREPARED FOR THE EXCULSIVE USE OF:

MAXIM

MAXIM ELECTRICAL CONTRACTORS

JON KING
OFF: 702-633-8800
CELL: 702-376-4036
FAX: 702-399-5737

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H2A INC.
ELECTRICAL ENGINEERING
OFF: (702) 451-0146
FAX: (702) 451-2850
5229 JAROM STREET
LV NV 89120

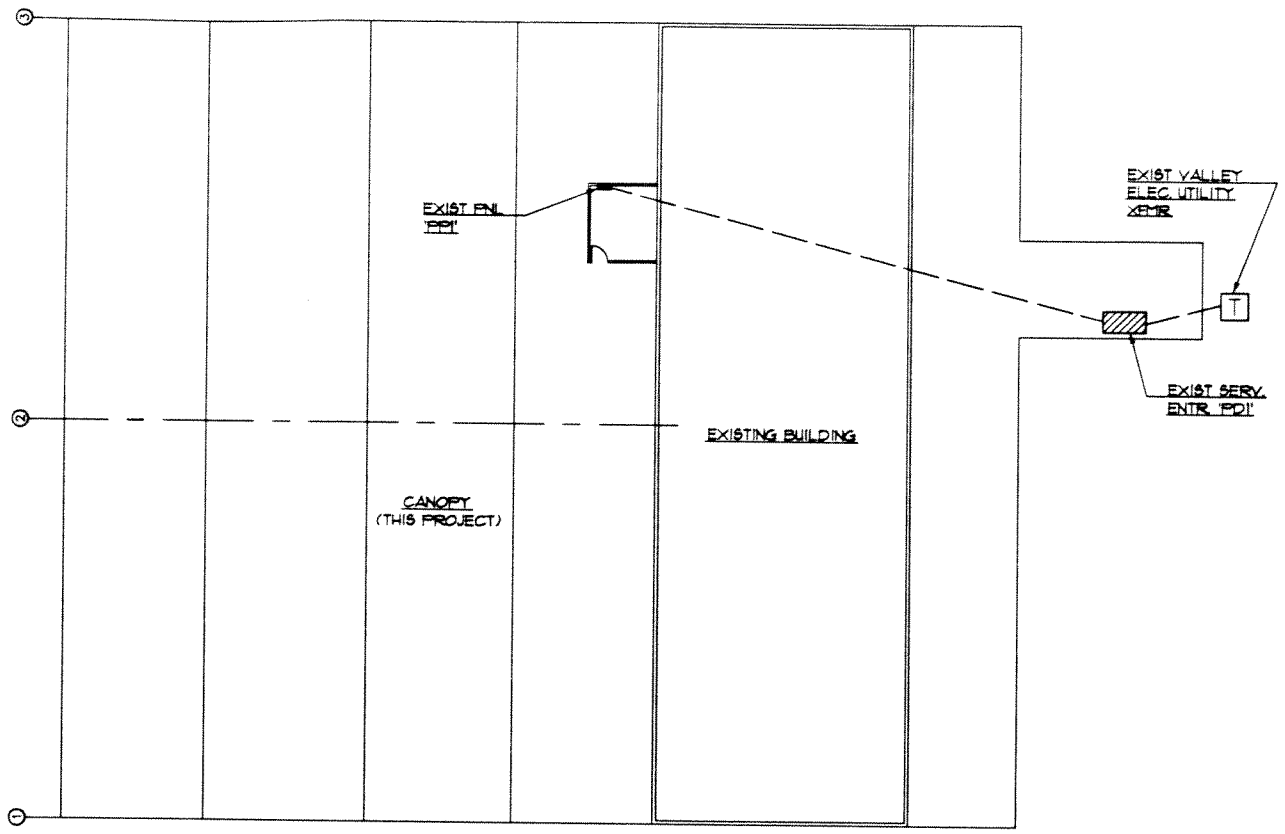
US ECOLOGY
CANOPY ADDITION
BEATTY, NEVADA

LIGHTING POWER

DATE :
SCALE
DRAWN
JOB
SHEET

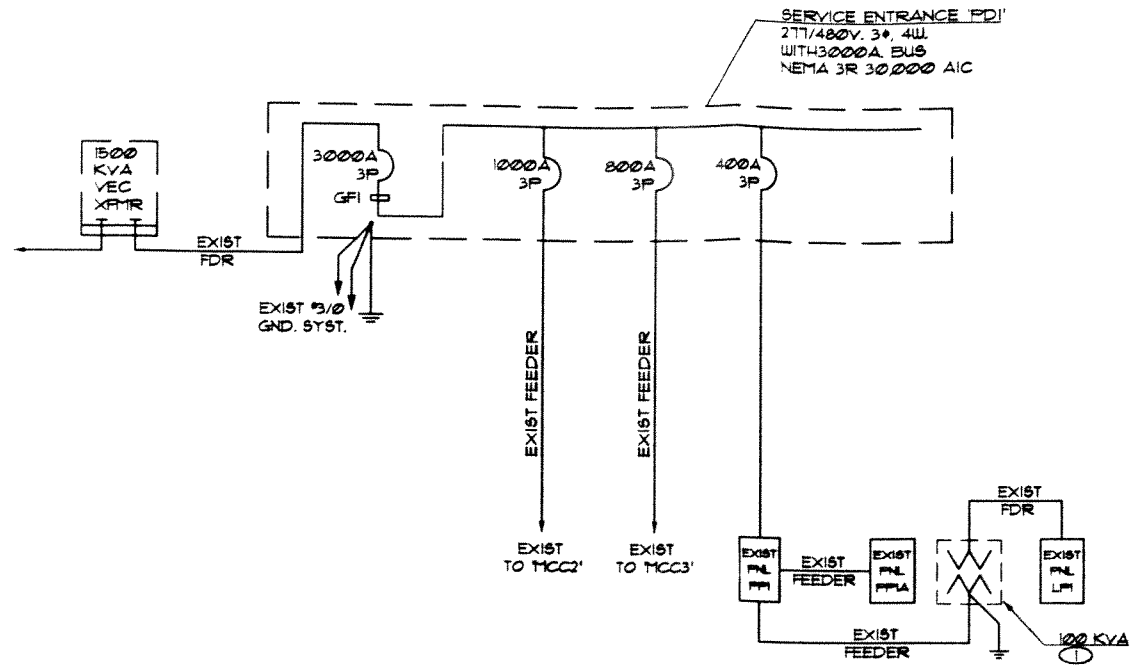
E-2

OF SHEETS



LOCATION PLAN

1/16" = 1'- 0" (A / E-1)



SINGLE LINE DIAGRAM

NO SCALE (1 / E-1)

FIXTURE SCHEDULE

FIXT. TYPE	MANUFACTURER OR EQUAL NAME	CATALOG NUMBER	WATTS	EFFICACY	MTG.	MTG. HT.	LAMP TYPE	REMARKS	VOLTS
A	LITHONIA	IB-454L-WDS-277-T5HO	240	81	SURF	+22'-0"	4-F54 TPHO	FLUORESCENT HIGH-BAY	277V
B	LITHONIA	TPR400M-TA-TB-15-LPI	460	75	ROOF	-	400W METAL HALIDE	FLOOD LIGHT & BRACKETS	480V
EA	LITHONIA	ELM2	50	-	WALL	VERIFY	FURN. W/UNIT	EMERGENCY LIGHTING UNIT WITH DUAL LIGHT HEADS	277V

OWNER APPROVED

DATE:

REVISION

PREPARED FOR THE EXCLUSIVE USE OF:

MAXIM ELECTRICAL CONTRACTORS

JON KING
OFF: 702-633-8600
CELL: 702-378-4036
FAX: 702-399-3737
1306 W. CRAG RD. ST. "E"
BOX 181 N. L.V., NV 89032
maximelectric@yahoo.com
maximelectric@cox.net

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP AND FAULT CURRENT CALCULATIONS AND HAS DESIGNED THE SYSTEM TO COMPLY WITH NEC 210-19(a) FPN NO. 4 FPRDERS COMPLY WITH NEC

ELECTRICAL ENGINEERING
OFF: (702) 451-0146
FAX: (702) 451-2850
5229 JAROM STREET
LV NV 89120
H2K INC.

US ECOLOGY
CANOPY ADDITION
BEATTY, NEVADA

LOCATION PLAN, SINGLE LINE DIAGRAM

DATE :
SCALE
DRAWN
JOB
SHEET

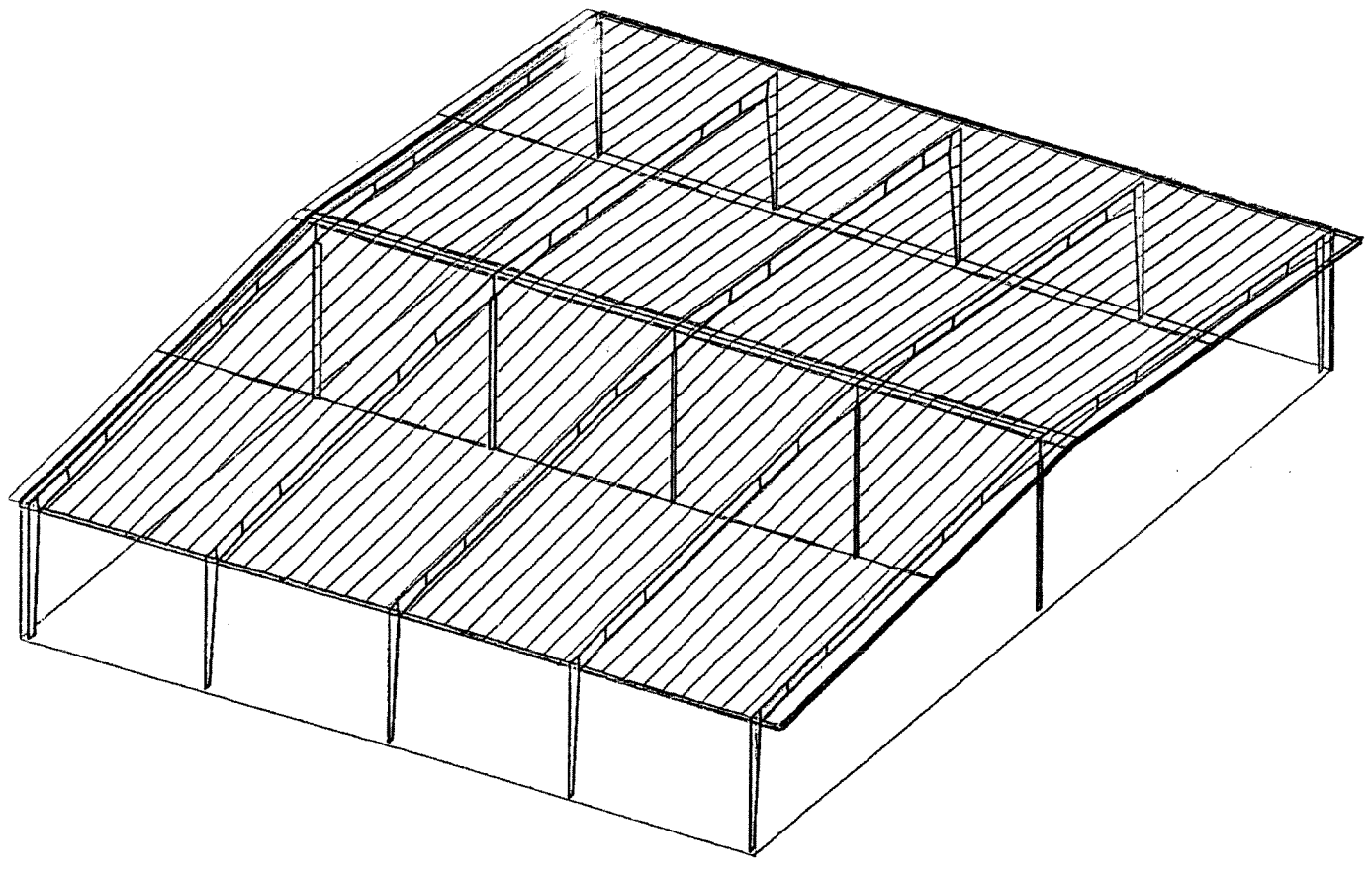
E-1

OF SHEETS

VP BUILDINGS
VARCO-PRUDEN

DRAWING INDEX	
DRAWING TITLE	PAGES
Cover Sheet	1
Notes	2
Anchor Rod Plan	3-4
Primary Structural	
Secondary Structural	
Covering	
Special Drawings	
Standard Erection Details	

DRAWING RELEASE HISTORY		
TYPE	DATE	DESCRIPTION
AR PLAN	12/8/2006	FOR CONSTRUCTION



VP Buildings, Inc. 3200 Players Club Circle Memphis TN 38125

GENERAL NOTES

MATERIALS

	ASTM DESIGNATION	
3 PLATE WELDED SECTIONS	A529, A572. A1011 SS	GRADE 50
COLD FORMED LIGHT GAGE SHAPES	A1011 SS	GRADE 55
BRACE RODS	A572	GRADE 65
HOT ROLLED MILL SHAPES	A36, A572. A529. A992	GRADE 36 KSI OR GRADE 50
HOLLOW STRUCTURAL SECTION (HSS)	A500	GRADE B
CLADDING	A653, A792	GRADE 50 CLASS 2 OR GRADE 80

A325 BOLT TIGHTENING REQUIREMENTS

IT IS THE RESPONSIBILITY OF THE ERECTOR TO INSURE PROPER BOLT TIGHTNESS IN ACCORDANCE WITH APPROPRIATE REGULATIONS. THE FOLLOWING CRITERIA IS IN COMPLIANCE WITH THE LATEST SPECIFICATIONS. HOWEVER THE ERECTOR IS RESPONSIBLE TO VERIFY LOCAL AUTHORITY REQUIREMENTS.
ALL CONNECTIONS MADE WITH A325 BOLTS MAY BE TIGHTENED TO THE "SNUG TIGHT" CONDITION AS PERMITTED BY THE SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS (2004 ED). UNLESS INDICATED AS "PRE-TENSIONED" ELSEWHERE IN THESE DRAWINGS, OR AS INDICATED BELOW

PRE-TENSION BOLTS ON PRIMARY FRAMING, BOLTED BRACING, AND STRUT CONNECTIONS IF LOCATED IN IBC SEISMIC PERFORMANCE / DESIGN CATEGORY D, E OR F, UBC ZONE 3 OR 4, NBCC ZONES 3 OR GREATER. SEE CODES AND LOADS NOTES BELOW FOR SEISMIC DESIGN CATEGORY.

PRE-TENSION BOLTS ON PRIMARY FRAMING, BOLTED BRACING, STRUTS AND CRANE RUNWAY CONNECTIONS IF BUILDING SUPPORTS A CRANE WITH A CAPACITY GREATER THAN 5 TONS

CONNECTIONS THAT SUPPORT RUNNING MACHINERY AND OTHER SOURCES OF IMPACT OR STRESS REVERSAL MUST BE PRE-TENSIONED.

ALL SLIP CRITICAL CONNECTIONS AS INDICATED IN THESE DRAWINGS WITH -SC DESIGNATION MUST BE PRE-TENSIONED. SC TYPE CONNECTIONS MUST BE FREE OF PAINT, OIL OR OTHER MATERIALS THAT REDUCE THE FRICTION AT CONTACT SURFACES

SECONDARY MEMBERS AND FLANGE BRACE CONNECTIONS ARE ALWAYS "SNUG TIGHTENED", EVEN IF ABOVE CONDITIONS EXIST, UNLESS SPECIFICALLY NOTED OTHERWISE ON DETAILS
WASHERS ARE NOT REQUIRED FOR "SNUG-TIGHT" CONNECTIONS. PRE-TENSIONED CONNECTIONS TIGHTENED USING THE TURN-OF-THE-NUT METHOD DO NOT REQUIRE WASHERS

CODES AND LOADS

WHEN MULTIPLE BUILDINGS ARE INVOLVED, SPECIFIC LOAD FACTORS FOR DIFFERING OCCUPANCIES, BUILDING DIMENSIONS, HEIGHTS, FRAMING SYSTEMS, ROOF SLOPES, ETC., MAY RESULT IN DIFFERENT LOAD APPLICATION FACTORS THAN INDICATED BELOW. SEE CALCULATIONS FOR FURTHER DETAILS

Building Code: 2003 International Building Code
Container Management: Building Use:Standard Occupancy Structure, Collateral Gravity: 7.00 psf (Not Including bldg wt)
LIVE LOADS AND RAINFALL
Live Load 20.00 psf (Reducible)
Rainfall: 4.00 inches per hour

SNOW LOAD
Ground Snow: 5.00 psf, Flat Roof Snow: 3.85 psf
Snow Exposure Category (Factor): 2 Partially Exposed (1.00)
Snow Importance: 1.000 Thermal Category (Factor): Kept just above freezing (1.10)

WIND LOAD
Wind Speed: 90.00 mph, Wind Exposure: B
Basic Wind Pressure: 12.35 psf
Wind Importance Factor: 1.000, Ft= Topographic Factor: 1.0000
Wind Enclosure: Partially Enclosed, 0.550
Note: All windows, doors, skylights and other covered openings must be designed for the specified above wind loads

EARTHQUAKE DESIGN DATA
Lateral Force Resisting Systems using Equivalent Force Procedure
Mapped Spectral Response - Ss:87.00 %g, S1:30.00 %g
Seismic Hazard / Use Group: Group 1
Seismic Performance / Design Category: D (See Bolt Tightening Note Above)
Seismic Snow Load: 0.00 psf
Seismic Importance: 1.000
Soil Profile Type: Stiff soil (D, 4)
Design Spectral Response - Sds: 0.6682, Sd1: 0.3600

Ordinary Steel Moment Frames
Frame Redundancy Factor:1.3744
Framing R-Factor: 3.5000, Frame Seismic Factor (%s): 0.1909, Design Base Shear = 0.1909 W
Ordinary Steel Concentric Braced Frames
Brace Redundancy Factor:1.5000
Bracing R-Factor: 3.5000, Brace Seismic Factor (%s): 0.1909, Design Base Shear = 0.1909 W

REVIEWED BY: KPT 12/08/06

THE VP ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF VP AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY VP. THE VP ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY VP EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY VP.

CANCSA A660 QUASAR Certified

AISC QUALITY CERTIFICATION

VP BUILDINGS, INC.
AISC CATG. MB CERTIFIED

COVER SHEET

BUILDER: RSCI		JOB #: CA0601917-02	
CUSTOMER:		DATE: 12/8/2006	
LOCATION: Beatty, Nevada		DRAWN / CHECK: AH	
PROJECT: US Ecology Container Management		PAGE: 1	
BUILDERS PO#:	VP BUILDINGS VARCO-PRUDEN	VPC VERSION: 5.6a	

12/8/2006 10:29:45 FILENAME: CA0601917-02OE1.VPC

APPENDIX E

CMU #5

Dry Hazardous Waste Storage Area #1

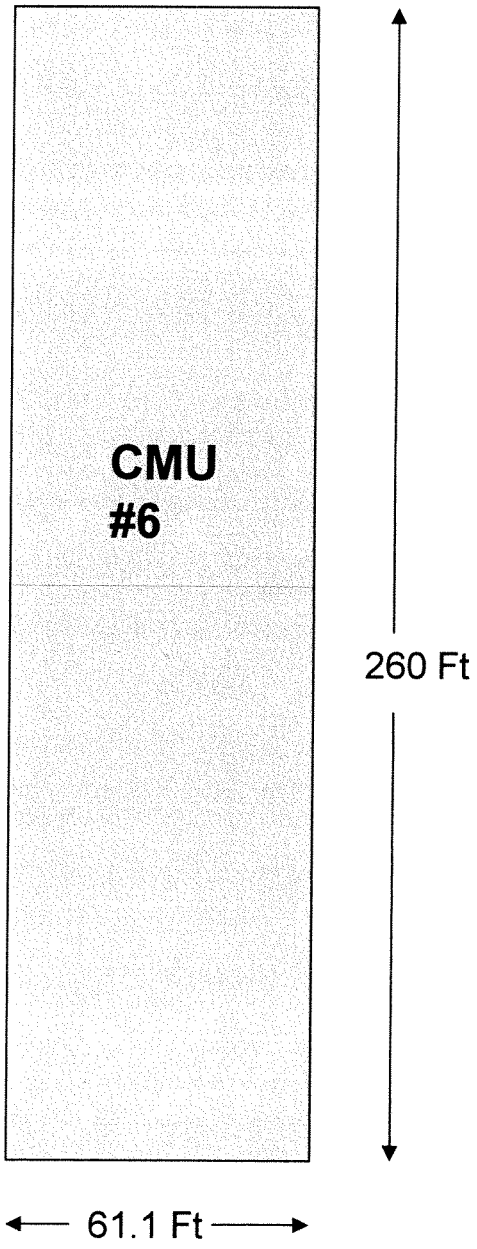
UNIT HAS BEEN CLOSED

APPENDIX F

CMU #6

DRY HAZARDOUS WASTE STORAGE AREA #2

Dry Hazardous Waste Storage Area #2



US Ecology Nevada

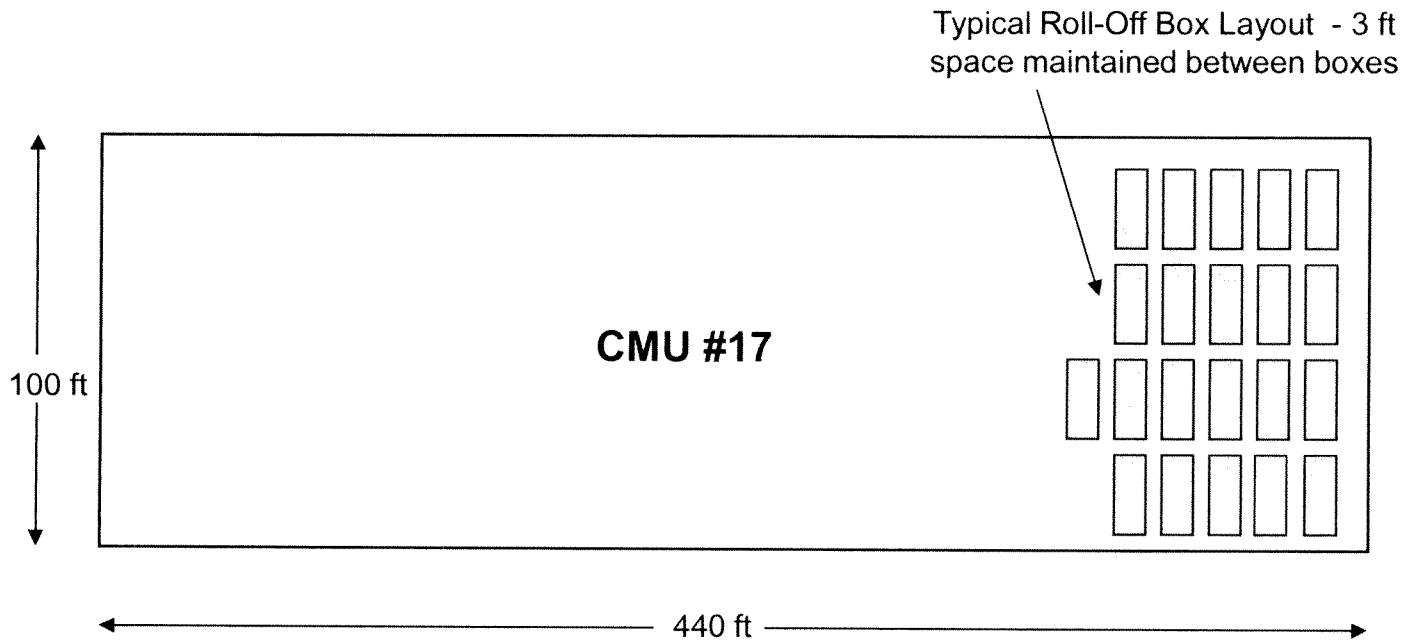
October 2009

APPENDIX G

CMU #17

DRY HAZARDOUS WASTE STORAGE AREA #3

Dry Hazardous Waste Storage Area #3



US Ecology Nevada

October 2011

APPENDIX H

Secondary Containment Calculations

CMU #1

CMU #7

CMU #16

Secondary Containment Calculations

CMU #7 - Bin Storage Area

There are 10 bays @ 271.2 ft^3 each for a total of 2,712 ft^3.

2,712 ft^3 x 7.48 gallons/ft^3 = 20,287 gallons of secondary containment capacity.

CMU #16 - CMS Building

Area of entire pad = 115 ft x 150 ft = 17,250 square feet
(Area of control room on CMS pad = 772 square feet)

Actual area of CMS pad = 17,250 ft^2 - 772 ft^2 = 16,478 square feet.

Volume = 16,478 ft^2 x 0.5 ft x 7.48 gallons/ft^3 = 61,630 gallons

PCB Storage Area (CMU 1) Secondary Containment Calculations

PCB storage permitted capacity = 59,400 gallons (1,080 55 gallon drums or equivalent)

Requirement:
25% of the total capacity *or* twice the volume of the largest container. Whichever is greater. (Precipitation is not taken into consideration since the building in enclosed)

25% of the total capacity = 71,816 gallons x 0.25 = *14,850 gallons*
or
Twice the volume of largest container = 2 x 115 gallons = 230 gallons

Containment Capacity Available = 48ft x 100ft x 0.75ft x 7.48gal/ft^3 = *26,928 gallons*

Must take drum space into account to determine actual containment volume.
Assumptions:

- Only the bottom 9" of the 55 gallon drum will take up containment volume.
- A maximum of 540 drums will be "on the floor" at any give time. This is 50% of the 1,080 drums permitted capacity. Drum will be stacked 2 high.
- A 55 gallon steel drum is 2 feet in diameter.

Volume of containment that each drum takes up = (3.14 x radius^2) x height
= 2.35 ft^3

2.35 ft^3 x 540 drums = 1,271.7 total ft^3.

Total volume in gallons the drums take up in the containment space.
Gallons = 7.48 gallons/ft^3 x 1,271 ft^3
= 9,512.3 gallons

Total volume available for secondary containment:
= total containment volume of CMU 1 - volume of drums in storage
= 26,928 - 9,512.3
= 17,415.7 gallons
Volume required 14,850 gallons

Based on a maximum capacity of 1,080 55 gallon drums CMU 1 would have an excess secondary containment of 2,565.7 gallons.

Secondary Containment Calculations

PCB Tank Farm

Tank Volumes:

T-4 = 7,500 gallons
T-5 = 7,500 gallons
T-6 = 5,000 gallons
T-7 = 5,000 gallons
T-8 = 3,000 gallons
Total = 28,000 gallons

Precipitation from 100 year storm = 3 inches
Precipitation Volume = 0.25 ft x 48ft x 48ft x 7.48gal/ft^3 = *4,308 gallons*

Requirement:
25% of the total capacity + Precipitation from 100 year storm *or* twice the volume of the largest tank + Precipitation from 100 year storm. Whichever is greater.

25% of the total capacity + Precipitation = (28,000 x 0.25) +4,308 = 11,308 gallons
or
Twice the vol of largest tank + Precipitation = (2 x 7,500) + 4,308 = *19,308 gallons*

Containment Capacity Available = (a) volume of air + (b) volume in sand
(a) = 46ft x 46ft x 1ft x 7.48gal/ft^3 = 15,828 gallons
(b) = 46ft x 46ft x 1ft x 30% (porosity of sand) x 7.48gal/ft^3 = 4,748 gallons

Tank Farm Containment = *20,576 gallons*

PCB Storage Area

PCB storage area capacity = 71,816 gallons

Requirement:
25% of the total capacity *or* twice the volume of the largest container. Whichever is greater. (Precipitation is not taken into consideration since the building in enclosed)

25% of the total capacity = 71,816 gallons x 0.25 = *17,954 gallons*
or
Vol of largest container = 115 gallons

Containment Capacity Available = 48ft x 100ft x 0.5ft x 7.48gal/ft^3 = *17,954 gallons*

Appendix I

Photos – Laboratory Totes and Containment Area

Photos – Laboratory totes and containment area.